

Name(s) of Risk Team Members: P. Cirnigliaro, A. Etkin, R. Karol, E. Lessard, J. Maraviglia, D. Passarello, A. Piper, R. Savage, J. Scott, M. Van Essendelft, C. Porretto			Point Value → Parameter ↓		1		2		3		4		5						
Area/Facility Description Title: Collider-Accelerator Department, Superconducting Magnet Division			Occupancy or Use		≤once/year		≤once/month		≤once/week		≤once/shift		>once/shift						
Area/Facility # (if applicable): Area-Wide FRA 18-05																			
Area/Facility Description: Area-Wide Warehouses			Severity		First Aid Only		Medical Treatment		Lost Time		Partial Disability		Death or Permanent Disability						
			Likelihood		Extremely Unlikely		Unlikely		Possible		Probable		Multiple						
Approved by: <i>E. Lessard</i> Date: 6-16-05 Rev.#: 0																			
Reason for Revision (if applicable):									Comments:										
					Before Additional Controls							After Additional Controls							
Physical Item or Activity		Hazard(s)	Control(s)				Occupancy A	Severity B	Likelihood C	Risk* AxBxC	Control(s) Added to Reduce Risk				Occupancy A	Severity B	Likelihood C	Risk* AxBxC	% Risk Reduction
Material Handling		See Facility-Wide Material Handling Evaluation	See Facility-Wide Material Handling Evaluation																
House Keeping		See Facility-Wide House Keeping Evaluation	See Facility-Wide House Keeping Evaluation																
Fire		See Facility-Wide Fire Evaluation	See Facility-Wide Fire Evaluation																
Electrical, up to 480 V ac		Shock or electrocution from exposed wiring, flash hazard, overheated wiring if not properly installed, overused or in disrepair, improper grounding	Equipment is listed or reviewed by CEE, Tier 1 inspections, disconnected cable policy, installations comply with applicable codes, procedures, training, distribution drawings, LOTO, working hot permits, qualified electricians and technicians, postings, locked areas, guarding, work planning, GFCI, grounding standards, emergency procedures, PPE				4	4	2	32	See Notes 1 through 4				4	4	1	16	50%
Manual material handling		Overexertion – injuries caused by excessive lifting, pushing, pulling, holding, carrying or throwing of an object	Gloves, hardhat, handcarts, dollies, training, safety shoes				4	3	4	48									
Work at heights		Falls to lower level, such as falling from a ladder or over a railing	Postings, barriers, fall protection, maintenance, training, work planning, procedures, Tier 1 inspections, PPE, approved scaffolding and platforms, approved ladders, anti-slip surfaces				4	5	2	40									

Pressurized Systems	Being struck by an object due to a pressure release	Postings, PPE, maintenance, training, work planning, certification/testing of pressure related equipment, Tier 1 inspection	4	3	2	24					
Pressurized Systems	Contact with temperature – steam that result in burns	Postings, PPE, maintenance, training, work planning, certification/testing of pressure related equipment, Tier 1 inspection	3	3	2	18					
Walking Surfaces	Falls on same level	Postings, barriers, maintenance, work planning, work platforms, Tier 1 inspection	4	3	2	24					
Chemical Handling	Burns	Procedures, compliance with regulations, training, CMS inventory, MSDS, volume controls, Fire/Rescue group response, PPE as required, locked or controlled areas, postings, labeling, proper containers, segregation, spill cleanup equipment available, Tier 1 inspections	3	3	2	18					
Chemical Handling	Asphyxiation	Procedures, compliance with regulations, training, CMS inventory, MSDS, volume controls, Fire/Rescue group response, PPE as required, locked or controlled areas, postings, labeling, segregation, Tier 1 inspections	3	3	2	18					
Chemical Handling	Eye exposure	Procedures, compliance with regulations, training, CMS inventory, MSDS, volume controls, PPE as required, eyewash and showers, locked or controlled areas, postings, labeling, proper containers, segregation, Tier 1 inspections	3	4	2	24					
Storage in general	Being struck by an object due to improperly secured material or loss of control	Inventory controls, load limits, Tier 1 inspections	4	4	2	32					
Storage in general	Bee stings, airborne pathogens	Training, work planning, Tier 1 inspections, clinic, PPE, maintenance. The C-AD ESHQ Office stocks Deep Woods OFF, which contains 25% DEET. Raid Wasp Killer is also stocked by the C-AD ESHQ Office for use as self-protection.	4	5	2	40					
Roofs	Leaks	Tier 1 inspections, maintenance, work planning, postings, temporary roof, janitors	4	3	4	48					
Roofs	Mold, mildew	Tier 1 inspections, maintenance	4	3	2	24					
Roofs	Electrical equipment damage	Tier 1 inspections, maintenance, work planning, postings, temporary roof, janitors	4	3	3	36					
Lighting	Poor visibility	Tier 1 inspections, maintenance, emergency lighting, temporary lighting	4	2	2	16					
Lighting	Falls on same level due to poor visibility	Tier 1 inspections, maintenance, emergency lighting, temporary lighting	4	2	2	16					
Lighting	Being struck against an object, such as a carpenter walking into a door frame due to poor lighting	Tier 1 inspections, maintenance, emergency lighting, temporary lighting	4	2	2	16					

Further Description of Controls Added to Reduce Risk:

NOTE 1: OSHA Teams visited C-AD during the period October 20 through October 31, 2003 and recorded electrical non-compliances. All OSHA findings will be closed by 2006 by full compliance or with an equivalent level of safety.. The status of the OSHA items are maintained in BNL’s Compliance suite, and closed on a schedule commensurate with funding.

NOTE 2: A compliance plan to have all electrical installations accepted by an Authority Having Jurisdiction (AHJ), as per 29CFR1910 Subpart S, has been implemented by BNL. UL, CSA, LLC or other NRTL accepted equipment will be acquired at BNL for all future installations. Prior installations shall be reviewed and accepted by qualified AHJs. The plan must be completed by 2009.

NOTE 3: Full compliance with NFPA 70E was adopted by the C-AD in December 2005. NFPA 70E prescribes protective clothing to protect against shock and arc blast; thus reducing the severity and likelihood of an injury. It also prescribes training, which is currently fulfilled by taking the 2005 version of Electrical Safety 1 and by attending the C-AD 3-hour classroom course on electrical safety rules and PPE.

NOTE 4: Contractor and vendor training in work planning and electrical safety has been improved. Plans to reach all contractors and vendors with regard to NFPA 70E requirements prior to performing work at BNL have been implemented. C-AD has obtained lists of all its vendors and suppliers and is ensuring that they take Electrical Safety 1 or have equivalent training if needed.

*Risk:	0 to 20	21 to 40	41-60	61 to 80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable